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LIGATURE
OF THE
EXTERNAL ILIAC ARTERY,
FOLLOWED BY
SECONDARY HÆMORRHAGE.

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BY  
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(*Reported by* GEO. AMERMAN, M.D., *House Surgeon.*)

Samuel O'D., aged 22; born in New York; by occupation a butcher. No hereditary tendency to disease traceable. He has always enjoyed good health. On the 6th of October, 1855, he was shot with a pistol. The ball entered the fleshy part of the left thigh, at the junction of the middle with the upper third, on the outer aspect of the limb, and made its exit on the inner side, at a point somewhat above its entrance. Very little hæmorrhage followed the injury, but the limb became painful and swollen. The pain was of a sharp lancinating character, first felt below the knee and extending down the leg to the foot and great toe. In the great toe the pain was most severe; it lasted about twenty-four hours, and then gradually disappeared; since which time he has had no pain in any part of the limb. The swelling continued four or five days. Antiphlogistic means were resorted to, for the purpose of subduing the inflammation, and cold water dressings applied to the part. He suffered very little constitutional disturbance, and two weeks after receiving the injury was able to walk about the yard. On the fourth or fifth day after he began to take exercise, he observed for the first time, a small, round, soft, and compressible tumor, situated on the anterior aspect of the thigh, in the inferior part of

Searpa's space. Pulsation of this tumor was distinctly perceptible to both the sense of touch and sight, particularly the former. This pulsation was felt in every part of the tumor, from the commencement. For the first nine days it grew rapidly, subsequently its growth became much slower. He has never suffered any pain, numbness, or swelling, in the limb since he first observed it. There was no discoloration of the integument, no increase or diminution in temperature. Five weeks after he first noticed it, Dec. 7th, 1855, he was admitted into Bellevue Hospital, under charge of Dr. Jas. R. Wood.

At the time of his admission his general health was good. The tumor was situated on its anterior aspect at the junction of the middle with the upper third of the thigh. It was five and a-half inches in its longitudinal, and six inches in its transverse diameter. An equable pulsation was felt in every part of its surface, synchronous with the arterial pulse. Pressure on the cardiac side caused a diminution in size, and total disappearance of the pulsation. Pressure on the distal side caused an increase in size. A "bruit de soufflet" distinctly audible in every part of it,—no *thrill*.

Diagnosis.—Femoral Aneurism.

Treatment.—Ligation of external iliac artery. The artery was tied above Poupart's ligament, in consequence of the large size of the tumor, and also the inflammatory exudation that had taken place about it, and consolidated the parts.

On the 8th day of December, the operation was performed by Dr. Wood, in the presence of several eminent surgeons of this city, and a large class of students. No anæsthetic was given, as it was thought the vomiting and retching which so often follow their use might be injurious, by causing too great an amount of pressure on the abdominal viscera.

The patient was placed upon the operating table, with his thigh slightly flexed. The external incision commenced over the external abdominal ring, one half inch above, and was carried along the course of Poupart's ligament in a semi-circular direction, with its convexity downwards, and terminating one inch above and within the anterior superior spinous process of the ilium. The abdominal layers were next divided; the transversalis fascia reached, and the finger passed into the internal ring; the fascia was then detached from the peritoneum; the separation began at the internal opening, where it was least adherent, and with the finger for a director, the remainder was divided. The peritoneum was then pushed aside, and held out of the way by an assistant with spatulæ; this brought the vessel in full view; the sheath

was opened with the nail of the index finger, and the aneurism needle passed from within and between the vein and artery. Very little hæmorrhage occurred during the operation, and only three small vessels were tied;—the edges of the wound were brought in apposition, and five interrupted sutures used to retain them in situ; next adhesive strips were applied, then a slight compress, and lastly, a single spica bandage. The patient was placed in bed, his limbs thickly enveloped in cotton, and strict quiet enjoined,—one grain of morphine given to procure sleep.

December 9.—Feels well; no pain or fever; pulse 100; no pulsation in posterior tibial artery.

December 10.—Pulse 140; complains of a slight cough, which causes considerable pain in the wound; the temperature of the limb is less than its fellow; the tumor is greatly diminished in size, and much harder; appetite good.

December 11.—Doing well; pulse, 104; slept well last night, after taking pulv. Doverii, ℥ii.; cough improved.

Dressings removed by Dr. Woodward, and the wound found covered by concrete healthy pus and blood. Slight erythema about the edges; ordered lotio plumbi et opii.

December 12.—Pulse, 90; cough still improving; no appreciable difference in the temperature of the two extremities. Dr. Wood removed all the dressings from the wound, and found it healthy, and entirely united by first intention, except around the ligatures—one of the ligatures was removed. The wound was re-dressed with adhesive strips—lead and opium wash discontinued.

December 13.—Doing well; pulse, 90.

December 15.—Pulse, 82; cough entirely disappeared. All the ligatures came away except the one on the external iliac. Pulsation in post. tibial felt for the first time since the operation.

December 16, 17, 18, and 19.—Nothing worthy of note occurred. The wound was dressed daily with adhesive strips and light dressings.

December 20.—Bowels moved twice freely, for the first time since the operation—appetite good.

December 21.—Pulse, 82. Dr. Wood visited the patient, and finding the ligature of external iliac lying loose in the wound, removed it.

December 26.—Since the last note the patient has been doing extremely well, not a single untoward symptom having presented itself. The wound had entirely closed, except a small opening where the ligature had been placed; it had been dressed daily, and nothing unusual had occurred to attract attention to the case. At 2 o'clock, p.m., he

was seen by Dr. Wood. At 3 o'clock I saw him, and he was doing well. At 4 o'clock Dr. Hitchcock, one of the House Staff, was hurriedly summoned to see him. He found him bleeding profusely. The blood "welled" up from the wound, and so rapidly, that he thought he must have already lost from two to three pints. (The time from the occurrence of the hæmorrhage until Dr. H. saw the patient, could not have been more than two minutes.) Dr. H. immediately compressed the artery and controlled the hæmorrhage. Dr. Wood was sent for, and, after seeing the case, decided to keep up the pressure during the night, and call a consultation of the Visiting Staff the next day at 10 o'clock, A.M. Pressure was kept up, by the hand placed over the artery, without any difficulty, or inconvenience to the patient. His pulse remained good, 100, and full—one grain of morphine given to procure sleep.

December 27.—Pulse, 100; slept the greater part of last night. A consultation was held at 10½ o'clock, A.M., and it was decided to keep up steady pressure with the hand over the artery until a compress and bandage could be safely applied.

December 28.—Doing well; pulse, 100; sleeps well; wound discharging some pus; continue pressure.

January 5.—Since the last note, patient has been doing extremely well; not a single untoward symptom; pressure has been kept up night and day. The wound has nearly united. Pulsation in external iliac entirely disappeared.

January 7.—Same as at last note. Pressure discontinued, and four pounds of shot, with a graduated compress and double spica bandage substituted.

January 15.—Doing well. Two pounds and nine ounces of shot removed; the remainder, with a compress and bandage, applied as before.

January 21.—All the shot removed. Compress and bandage re-applied.

February 11.—Sixty-fifth day after the operation and forty-seventh after the hæmorrhage; patient in good health; he wears a truss over the cicatrix of the wound. The limb is normal in size, temperature, and sensibility. Its nutrition is good. The original tumor has nearly disappeared; it is scarcely perceptible to the sight, but is quite easily felt beneath the skin. The epigastric artery is felt pulsating above the wound. The femoral entirely obliterated; the other arteries in the upper part of the thigh enlarged; the anastomatica magna distinctly felt, and its pulsations are communicated to the remains of the tumor. Patient, discharged cured.

The interesting facts in the above case may be summed up as follows:—The pulsation in the posterior tibial artery was absent until the seventh day after the operation.

On the thirteenth, the ligature from the external iliac was removed.

On the eighteenth, secondary hæmorrhage supervened; five days after the ligature came away.

Pressure by the hand was kept up twelve days, from the eighteenth to the thirtieth day, after the operation. The shot, bandage, and compress were then substituted.

On the twenty-eighth day after the operation, and tenth after the hæmorrhage, pulsation of the external iliac artery entirely disappeared. On the thirty-eighth, part of the shot were removed, the remainder with a compress and bandage applied as before.

On the sixty-fifth day after the operation, and forty-seventh after the hæmorrhage, all the dressings were removed and the patient discharged cured.

The following collection of cases exhibits the dangers of secondary hæmorrhage, complicating ligature of the external iliac:—

Cases of Secondary Hæmorrhage after Ligature of the External Iliac:—

Operator.	Ligature separated.	Date of Hæm.	Treatment.	Result.
Abernethy.	----	5th day.	----	Died.
Mouland.	24th day.	----	----	Cured.
Dupuytren.	16th day.	24th day.	Pressure.	Cured.
Todd.	21st day.	24th day.	Lig. reapplied.	Died.
B. Cooper.	----	19th day.	----	Died.
Hewson.	29th day.	6th day.	Pressure.	Cured.
Lallemand.	----	5th day.	----	Died.
Baroni.	19th day.	40th day.	Laid open tumor.	Died.
Power.	----	5th day.	----	Died.
A. Cooper.	----	17th day.	----	Died.
Adams.	28th day.	18th day.	Pressure.	Died.
Smith.	7th day.	----	Pressure.	Died.
Ogden.	----	8th day.	----	Died.
Wood.	13th day.	18th day.	Pressure.	Cured.

Summary.—Number of Cases, 14; recovered, 4; died, 10.

